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New Double Stars. By the Rev. T. E. Espin, M.A.

During the spring, especially in the early part of the year, there have not been many fine nights; and when the sky has been clear, the definition has been usually very poor. The measures obtained in the case of faint comites are in several cases little more than approximations.

No.	B.D.	R.A. 1900.	Decl. 1900.	Position Angle.	Distance.	Mags.		No. of Nights.	Date. 1909.
	°	h m	° ′	°	″				
705	+44,582	2 43·1	+44 59	225·9	8·26	8·5	11·7	3	·104
706	+51,723	3 15·2	+51 18	126·9	2·60	12·5	13·2	3	·105 BC
				304·8	26·37	A=	8·6	3	·105 AB
707	+53,744	4 5·2	+53 29	152·9	8·87	8·3	13·2	2	·126 AB
				287·7	19·01	C=	12·6	2	·126 AC
708	+53,857	5 2·0	+53 31	68·1	3·52	9·2	12·0	2	·216
709	+52,933	4·2	+52 13	228·2	1·94	9·0	9·2	5	·163
710	+53,946	39·9	+53 43	173·6	2·65	9·2	12·0	1	·205
711	+52,1026	53·0	+52 19	271·2	2·42	9·1	9·6	2	·136
712	+53,1033	6 24·6	+53 19	249·1	7·60	9·1	9·6	1	·205
713	+52,1171	7 0·4	+52 52	48·4	5·55	8·6	13·7	2	·135
714	+53,1229	8 12·0	+53 35	194·2	5·97	9·1	12·5	3	·234
715	+54,1279	9 2·5	+54 4	226·3	7·27	9·2	10·5	3	·301
716	+52,1374	6·4	+51 58	293·2	7·52	8·5	10·5	2	·247
717	+51,1501	16 3	+51 12	309·0	4·42	9·0	13·2	4	·279
718	+52,1385	16·5	+52 2	26·5	7·90	9·2	11·5	2	·248
719	+50,1662	30·3	+50 28	258·2	4·55	9·3	11·5	2	·277
720	+50,1701	51·1	+50 42	90·8	3·07	9·3	12·7	2	·290
721	+54,1373	10 18·7	+53 59	131·3	3·69	9·0	12·5	4	·277 AB
				285·5	33·88	C=	11·6	2	·278 AC
722	+53,1454	54·5	+53 9	107·0	8·42	9·1	10·7	2	·293
723	+51,1704	11 44·7	+51 14	300·8	6·03	9·2	9·3	5	·295
724	+51,1710	49·1	+51 6	227·0	3·12	9·0	11·3	3	·311
725	+47,1933	12 5·0	+47 9	58·4	6·83	8·9	9·3	2	·341
726	+54,1531	26·0	+54 25	173·4	9·64	9·1	11·0	3	·328 AB
				171·3	21·67	C=	12·2	3	·328 AC
727	+46,1810	35·5	+46 10	13·6	6·02	8·3	11·5	1	·350
728	+51,1779	37·3	+51 41	329·5	6·42	9·3	13·7	2	·296
729	+54,1546	39·3	+54 21	226·3	8·97	8·5	12·0	3	·341
730	+51,1785	44·6	+51 30	65·3	3·37	9·1	10·5	2	·287
731	+46,1824	46·0	+46 37	348·6	12·14	8·0	12·5	1	·350
732	+49,2204	13 10·9	+49 10	79·0	3·30	9·0	9·1	2	·349
733	+54,1599	17·2	+53 53	210·9	6·21	8·8	9·4	3	·322

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No.	B.D.	R.A. 1900.		Decl. 1900.		Position Angle.	Distance.	Mags.		No. of Nights.	Date. 1909.
	°	h	m	°	′	°	″				
734	+52,1697		18·0	+51	54	163·5	7·59	9·1	9·4	2	·282
735	+50,2017		34·2	+50	41	284·2	3·55	9·5	11·0	2	·349
736	+52,1747		48·1	+52	6	268·2	9·53	8·6	11·9	2	·312
737	+53,1696	14	9·3	+52	58	301·7	3·78	10·2	10·6	3	·339
738	+53,1707		18·8	+52	51	311·0	6·52	8·6	11·8	3	·333
739	+52,1843		58·7	+51	59	155·3	2·50	9·2	9·6	2	·349
740	+54,1739	15	15·9	+53	54	39·2	3·42	8·9	9·4	2	·334
741	+53,1773		17·0	+53	7	230·2	8·64	8·5	10·5	2	·341
742	+54,1767		44·7	+53	56	85·3	3·10	9·0	9·2	2	·346
743	+54,1792	16	2·7	+54	42	6·4	7·02	9·0	12·1	3	·337

Notes.

707.—The measures of the distances of both *comites* are unsatisfactory.

720.—A difficult object from the faintness of the *comes*. Examined on four nights.

728.—*Comes* faint and difficult to measure.

729.—Distance doubtful.

730.—There is no star in the position of B.D. +51°,1785 as given by Argelander. This star agrees with his R.A., but lies 2′ N. of his place.

Observations of helium D_3 absorption in the neighbourhood of Sun-spots in 1908.

By Captain R. A. C. Daunt, D.S.O.

The following observations of D_3 absorption in the neighbourhood of sun-spots were made with the same instruments as in previous years, viz. 3-inch equatorial refractor and Thorp prism-grating spectroscope, 15,100 lines to the inch, the eyepiece usually employed being a Steinheil monocentric 20 mm, giving a power of 52.

There is little to add to the remarks made at the head of the tables in the paper on this subject last year, *Monthly Notices*, June 1908. The tables have been drawn out on the same plan, and the system of numbering the sun-spot groups is the same as previously.

The intermittent nature of the appearance of the dark D_3 absorption-line has again been noted; groups which showed D_3 absorption on some days did not do so on others.

As previously, the D_3 line had a broken, patchy, lumpy appearance in all cases under observation with one exception, viz. group No. 6491 on August 1st., when, in addition to the lumpy, thickened appearance of D_3 in rear of the group, the D_3 line of absorption showed as a fine narrow line running across the group; *vide The Observatory*, September 1908. This is the only occasion I have recorded an observation of D_3 as a fine narrow line. A double reversal of the D_3 line was recorded in the area between groups Nos. 6393 and 6396 on April 4th.

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